

REMARKS

Claims 1, 4, 6-17, 19-23, 26-39, 41-45, and 49-55 are presently pending in the application. Claims 45 and 49-55 were rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent No. 6,305,019 ("Dyer"). Claims 1, 4, 6-17, 19-23, 26-39, and 41-44 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dyer in view of U. S. Patent No. 6,088,346 ("Du").

Independent claims 1 and 23 were amended to more clearly define the present invention.

Claims 6, 27, 28, 30, and 31 were canceled with this amendment. Claims 45 and 49-55 were canceled with this amendment in order to facilitate an early notice of allowance of the remaining claims.

The specification was amended in order to correct typographical errors. It is submitted that no new matter is added with this amendment.

Applicant is left confused with the Examiner's basis for the rejections. For example, based on the final Office Action, Applicant is unsure where in col. 4, lines 12-26 and lines 31-59, col. 6, line 37 – col. 7, line 29, line 48+ and col. 8, lines 27-67 Dyer teaches, discusses, or implies the following steps of independent claim 1:

(1) **determining from a table whether a given packet of the plurality of packets is a multicast packet or a unicast packet**, wherein a multicast packet is designated for transmission from a plurality of modulators included in the multi-modulator and a unicast packet is designated for transmission from only one modulator of the plurality of modulators;

(2) **copying the determined multicast packets** depending upon how many of the plurality of modulators from which the multicast packet is to be transmitted;

(3) **appending a data unit header** to each packet and copied packet, wherein the data unit header associates the packet with the transmitting modulator; and

(4) **stripping the data unit header** from each packet and copied packet.

Applicant requests Examiner to more clearly define and designate the particular sections in Dyer that relate to the claimed steps in order assist the Applicant for clarifying the issues for appeal.

Discussion of the Rejection of claims 1, 4, 76-17, 19-23, 26, 29, 32-39, and 41-44 under 35 U.S.C. 103(a)

It is submitted that Dyer and Du, either alone or in combination, do not render independent claim 1 and dependent claims 4, 7-17, and 19-22 unpatentable for at least the following reasons.

Col. 4, lines 12-26 of Dyer, used to reject independent claim 1, state that the invention provides an individual or a plurality of subscribers with information, which is available in an “on demand” basis. In this way, the subscriber is able to control the VOD presentation associated with the information. It is stated that the information can be supplied to all subscribers through a broadcast transmission, where all subscribers receive the same information; pointcast, where each subscriber receives specific information that is only addressed to a specific subscriber; or narrowcast, where a subset of all the subscribers received particular information.

Applicant believes that this paragraph teaches information, which describes available “on-demand” presentations, can be broadcasted, pointcasted, or narrowcasted to subscribers. However, there is no discussion on how this information is broadcasted, pointcasted, or narrowcasted. Importantly, col. 4, lines 12-26 do not teach or imply the steps as claimed in independent claim 1 of (1) determining from a table whether a given packet of the plurality of packets is a multicast packet or a unicast packet; (2) copying the determined multicast packet; (3) appending a data unit header to each packet and copied packet; (4) providing each packet to a buffer; and (5) stripping the data unit header from each packet.

Col. 4, lines 31-59 of Dyer, used to reject independent claim 1, relates to FIG. 1, which is a high-level block diagram of the interactive information system. As stated in lines 31-59, the information server (IS) 102 provides a plurality of packetized data streams to one or more video session managers (VSMs) 106. The IS provides information in response to specific information requests from the VSM. The VSM performs various system command and control functions as well as communicates the data streams to the cable network. The VSM may address the streams to be propagated to the subscribers in broadcast, narrowcast, or pointcast modes.

Applicant believes this paragraph teaches that the IS is capable of providing several program streams to one or more VSMs in an “on-demand” basis. The VSM addresses the streams in a broadcast, narrowcast, or pointcast mode; however, there is no discussion or implication on how the VSM addresses the streams. In light of the teachings of Dyer, it is believed that the VSM addresses the streams by TIDs. Importantly, there is no discussion or implication that the VSM determines a particular transmitting modulator identifier (i.e., a particular transmitting DVM) in which to transmit the streams.

Additionally, Dyer does not specifically teach or imply in col. 4, lines 31-59 the steps as claimed in independent claim 1 of (1) determining from a table whether a given packet of the plurality of packets

is a multicast packet or a unicast packet; (2) copying the determined multicast packet; (3) appending a data unit header to each packet and copied packet; (4) providing each packet to a buffer; and (5) stripping the data unit header from each packet.

Col. 6, line 37 – col. 7, line 29, used to reject independent claim 1, states that the VSM opens a session for a particular subscriber after executing a navigator. Once a program is selected, the VSM associates the program with the open session for that particular subscriber. Each program that is available has a set of unique identification numbers or PIDs. Thus, when a program is requested, the VSM sends the requested PID to the IS, and the IS recalls the program from memory and provides the requested information to the VSM as a packetized data stream. The data stream packets are addressed to the appropriate TID, and subsequently, the VSM processes the data stream for transmission to the subscriber terminal. Since the subscriber has exclusive access to the data stream, the subscriber may control the stream or can begin another session, which temporarily stops the previous session, by sending control information to the VSM. Also discussed in col. 7, lines 12-29 is end-to-end synchronization using clock signals.

Importantly, col. 6, line 37 – col. 7, line 29 do not teach or imply the steps as claimed in independent claim 1 of (1) determining from a table whether a given packet of the plurality of packets is a multicast packet or a unicast packet; (2) copying the determined multicast packet; (3) appending a data unit header to each packet and copied packet; (4) providing each packet to a buffer; and (5) stripping the data unit header from each packet.

Col. 7, lines 48+, used to reject independent claim 1, state that the IS provides requested information in a plurality of transport streams having the information requested by many subscribers packetized and multiplexed into 32 independent streams. Each packet carries a TID (i.e., the subscriber terminal ID) of a requesting subscriber terminal and is presented to the video session manager on a particular output port of the IS.

The IS is a parallel processing system capable of accepting information several requests from the VSM and generating and providing a plurality of program streams in response to each request (col. 7, lines 33-37). Notably, Dyer teaches col. 7, lines 48+ that each of the plurality of program streams are specifically addressed to a subscriber by including the TID in each packet.

Importantly, col. 7, lines 48+ do not teach or imply the steps as claimed in independent claim 1 of (1) determining from a table whether a given packet of the plurality of packets is a multicast packet or a unicast packet; (2) copying the determined multicast packet; (3) appending a data unit header to each packet and copied packet; (4) providing each packet to a buffer; and (5) stripping the data unit header from each packet.

Col. 8, lines 27-67, used to reject independent claim 1, state that each VSM contains a plurality of digital video modulator (DVM) modules. **The stream distributor 200 routes the plurality of data streams from the IS to all DVMs** (col. 8, lines 34-36). Each DVM has two output ports that service one or two neighborhoods. Also the output ports may carry either one or two information channels. In this manner, the DVM module generates four digitally modulated channels that are independently frequency agile.

It is believed from the bolded statement and in light of the rest of the teachings of Dyer that all VOD sessions transmitting programs to subscribers via a TID are provided to all DVMs available in a VSM. In other words, there is no requirement to determine whether a stream is multicasted or unicasted. The requesting subscriber terminal receives and decodes the program based on its TID.

Further, there is no teaching or implication of (1) determining from a table whether a given packet (or data stream) of the plurality of packets is a multicast packet or a unicast packet; (2) copying the determined multicast packet (since a program is provided to all DVMs); (3) appending a data unit header to each packet and copied packet; (4) providing each packet to a buffer; and (5) stripping the data unit header from each packet.

The Examiner relies on Du to fix the failing of Dyer in order to teach copying the determined multicast packets depending upon how many of the plurality of modulators from which the multicast packet is to be transmitted. It is submitted, however, that there is no motivation to combine Du with Dyer in order to render independent claim 1 obvious.

Du routes signals around a network in an asynchronous transfer mode within a ring. In this manner, intervening devices buffer incoming signals and, based on clock signals, transmit the signals to the next device. This is in direct contrast to Dyer's parallel processing system (col. 7, lines 33-37) that is capable of providing a plurality of program streams at one time. There is, therefore, no obvious advantage for Dyer's parallel processing system to implement any of the teachings of Du's asynchronous (or serial) processing system.

Even though Dyer mentions broadcast, narrowcast, or pointcast modes, there is no discussion on how these modes are established and, based on the teachings of Dyer, there is no obvious reason to include the copied packets and buffers of Du. In particular, Dyer teaches in col. 4, lines 20-26, that "the information can be supplied to the subscribers through broadcast, where all subscribers receive the same information," in which case, there is no requirement for copying and buffering the information or determining which VSM, and more particularly, which DSM, will transmit the information. Also, Dyer teaches that "each subscriber receives specific information that is only addressed to a specific subscriber." In this case, Dyer teaches away from deciding which particular VSM or DSM will transmit the

information since the information is addressed to a specific subscriber and can therefore be “pointcasted” not by determining a particular transmitting DSM, but rather by transmitting the information having a specific subscriber address. Furthermore, Dyer teaches that “a subset of all the subscribers received particular information.” However, again, Dyer is silent on the particulars of how the “narrowcast” mode is achieved; therefore, the Applicant submits that the Examiner must rely on the teachings, which do not discuss or teach copying and buffering packets and determining from which modulator to transmit the packets.

Accordingly, it is believed that independent claim 1 is patentable over the cited art. Dependent claims 7 – 13, which further limit independent claim 1, are directed towards buffering and retrieving the multicast and unicast packets.

Examiner relies on Dyer (col. 9, line 26 – col. 10, line 25 and lines 54+) and Du to reject dependent claim 7. It is unclear where in col. 9, line 26 – col. 10, line 25 and lines 54+ teach receiving a message indicating that a particular modulator is ready to receive a packet from one of the buffers for transmission.

Examiner relies on Dyer (col. 9, line 26 – col. 10, line 25) to reject dependent claim 10. It is unclear where in col. 9, line 26 – col. 10, line 25 teach (1) associating a count register with each modulator; (2) incrementing the count register; and (3) when a packet is retrieved, decrementing each count register.

It is believed, therefore, that independent dependent claims 6-13, which further limit independent claim 1, should also be allowable. Further, dependent claims 14-17 and 19-22 limit independent claim 1 and should also be allowable over the cited art.

It is also submitted that Dyer or Du, either alone or in combination, do not render independent claim 23 and dependent claims 26, 29, 32-39, and 41-44 unpatentable. Independent claim 23 claims an apparatus that (1) receives an input transport stream; (2) determines whether the packets are multicast packets or unicast packets; (3) copies the determined multicast packets; (4) appends a data unit header to each packet and copied packet, where the data unit header identifies a modulator; and (5) transmits the packets from a modulator based on the data unit header.

For the reasons stated above with regard to independent claim 1, it is submitted that Dyer and Du, either alone or in combination, do not render independent claim 23 unpatentable. Since dependent claims 26, 29, 32-39, and 41-44 further limit claim 23, they should also be allowable over the cited art.

Reconsideration and reexamination of the present application is requested in view of the foregoing amendment and remarks.

CONCLUSION

The foregoing is submitted as a full and complete response to the final Office Action dated November 20, 2007. Claims 1, 4, 7-17, 19-23, 26, 29, 32-39, and 41-44 will be pending in the present application upon entry of the present amendment, with claims 1 and 23 being independent. Based on the amendments and remarks set forth herein, Applicant respectfully submits that the subject patent application is in condition for allowance. Because the claims may include additional elements that are not taught or suggested by the cited art, the preceding arguments in favor of patentability are advanced without prejudice to other bases of patentability.

Upon entry of the foregoing Response, the above-identified patent application includes 2 independent claims. Because Applicant has previously paid for 55 total claims and 3 independent claims, Applicant submits that no additional fee is due. Should it be determined that any additional fee is due or any excess fee has been received, the Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to deposit account #19-0761.

Should the Examiner have any comments or suggestions that would place the subject patent application in better condition for allowance, he is respectfully requested to telephone the undersigned agent at the below-listed number.

Respectfully submitted:

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